

Understanding the Geography of Boston's Evictions

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Purpose

Boston is a growing city characterized by both rapid economic growth and, increasingly, housing instability. Our analysis takes a look at potential relationships between various factors and housing instability in the City of Boston.

Data Retrieval

- **Businesses** (via the FourSqaure API)
- **Evictions** (via partnership with the City of Boston's Office of Housing Stability)
- **Crime** (via the City of Boston API)
- **Income** (via the Census Data API)
- **Census tracts** GeoJSON file

Transformations and Stability Score

We used the geospatial analysis package Shapely within a MapReduce-style algorithm to aggregate evictions, crimes, and businesses by census tract.

After transforming our data, we created a normalized "stability score" that measures the housing instability of a given census tract using the indicators noted as significant in a [paper](#) by housing scholar Matthew Desmond (eviction rate and crime rate).

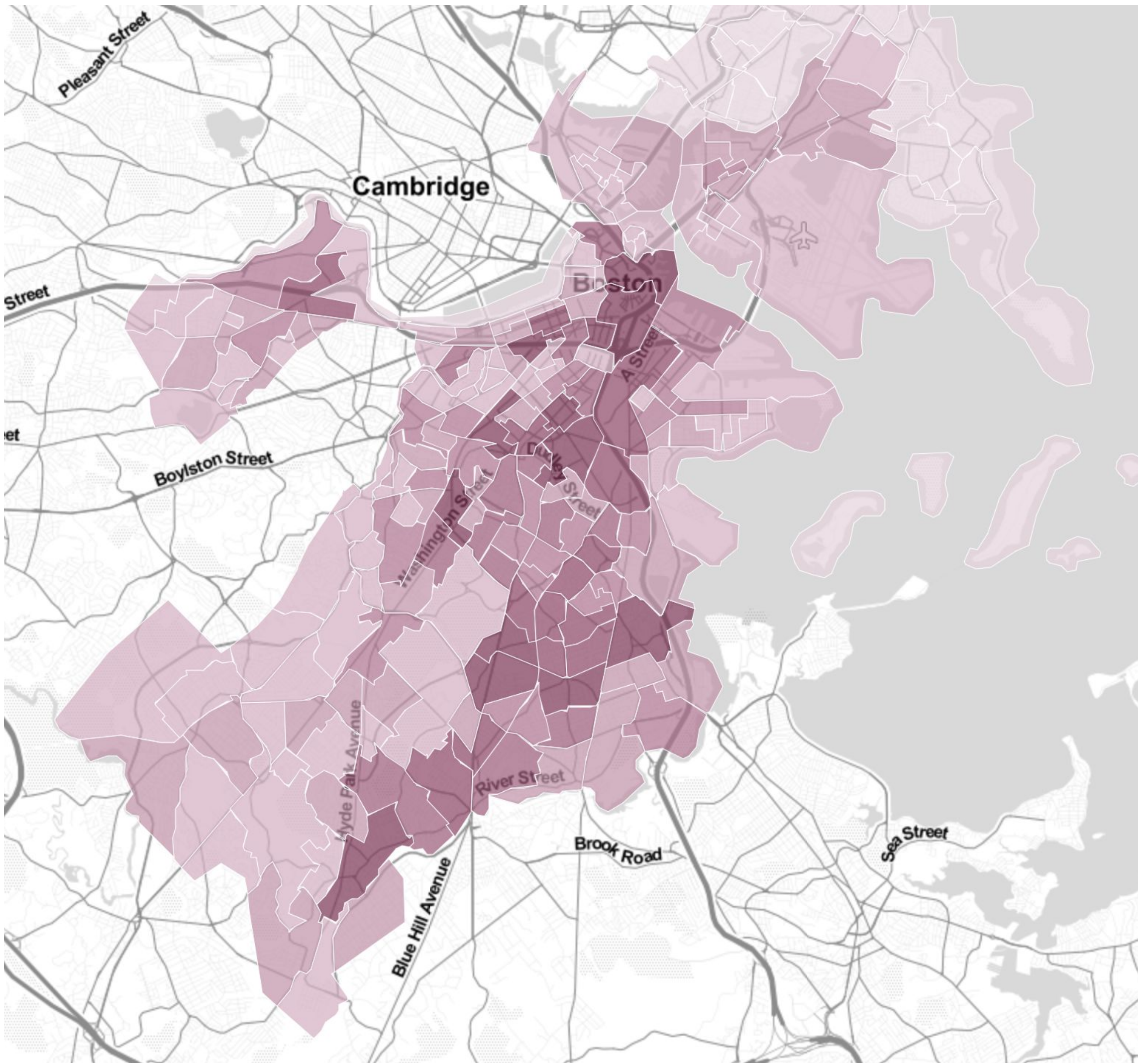
$$stabilityScore = \frac{\frac{(numEvictions - minEvictions)}{rangeEvictions} + \frac{(numCrimes - minCrimes)}{rangeCrimes}}{2}$$

Statistical Analysis

Income Level	corr(evictions, businesses)
Low Income	-0.07
Low-Mid Income	-0.06
Mid-High Income	-0.04
High Income	0.22

We initially found that business and stability score had a small and statistically insignificant correlation, so we decided to partition the tracts by income quartiles.

This map of stability score by census tract shows significant housing instability in Roxbury, Dorchester, and the Seaport district.



Conclusions

We conclude that the areas highlighted in the above map may be at risk for future housing displacement, and that the relationship between business activity and evictions is moderated by the median income of a geographic area